



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/255,605 02/22/99 YAMAZAKI

S SEL-125

EXAMINER

WM02/0201

COOK MCFARRON & MANZO
200 WEST ADAMS STREET SUITE 2850
CHICAGO IL 60606

KOVALICK, V

ART UNIT

PAPER NUMBER

2673

DATE MAILED:

02/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/255,605

Applicant(s)

Shunpei Yamazaki

Examiner
Vincent E. Kovalick

Group Art Unit
2673



☒ Responsive to communication(s) filed on Feb 22, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-18 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-18 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2673

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 9 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

o In claims 3, 9 and 15, the term “(110)-direction” needs to be **defined** in said claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman (U.S. Patent No. 5,281,957 taken with Dwyer, III (U.S. Patent No. 5,281,960).

Relative to claims 1, Schoolman **teaches** a portable computer and head mounted display (col. 2, lines 63-68; col. 3, lines 1-33 and Figs. 1 and 7). Schoolman further **teaches** an information

Art Unit: 2673

processing device comprising: a display device having flat panel displays for right and left eyes mounted on the head of a user (col. 3, lines 1-4 and Fig. 7). Schoolman further **teaches** an input operation device connected to said controller, wherein said flat panel displays are capable of displaying a plurality of pieces of information at a time (col. 6, lines 54-59). Schoolman **teaches** the flat panel displays being liquid crystal displays (col. 3, lines 1-4); it being understood that it is well known and in common practice in the art to display a plurality of pieces of information at a time on LCD's.

Schoolman **does not specifically teach** (though he does suggest, col. 5, lines 6-13) a controller connected to said display device.

Dwyer, III **teaches** a controller connected to a display device (col. 1, lines 55-62 and Fig. 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolman the feature as taught by Dwyer, III in that (as suggested by Schoolman) a controller is a necessary means in order to control and input the video images to the display devices.

5. Claims 2 and 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III as applied to claim 1 in item 4 hereinabove, and further in view of Funai et al. (U.S. Patent No. 6,162,667).

Regarding claim 2, Schoolman taken with Dwyer, III **does not teach** channel formation regions of TFTs connected to pixel electrodes of the said flat panel displays of said display device are

Art Unit: 2673

constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface.

Funai et al. **teaches** channel formation regions of TFTs connected to pixel electrodes of the said flat panel displays of said display device are constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface (col. 1, lines 8-14).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolman taken with Deyer, III the feature as taught by Funai et al. in that that it facilitates the fabrication of an active matrix type liquid crystal display device.

Regarding claim 4, Funai et al. further **teaches** an information processing device wherein 90 % or more of crystal lattices at grain boundaries of a channel formation regions have continuity (col. 12, lines 60-65). Though Funai et al. does not specifically cite 90 % he does teach "uniformity over a large area".

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III as applied to claims 1 in items 4 herein above, and further in view of Intriligator (U.S. Patent No. 6,163,323) taken with Lewis (U.S. Patent No. 6,040,812).

Relative to claim 5, Schoolman taken with Dwyer, III **does not teach** flat panel displays comprising a display device on which one screen is written at frequencies in the range from 30 Hz

Art Unit: 2673

to 180 Hz and on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

Intriligator **teaches** a self-synchronizing animation (col. 1, lines 6-9 and col. 2, lines 27-40).

Intriligator further **teaches** a display device on which one screen is written at frequencies in the range from 30 Hz to 180 Hz (col. 3, lines 24-37).

Schoolman taken with Dwyer, III in view of Intriligator **does not teach** flat panel displays comprising a display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

Lewis **teaches** an active matrix display with integrated drive circuitry (col. 1, lines 6-8 and 54-65; col. 2, lines 1- 16). Lewis further **teaches** display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen (col. 13, lines 23-34).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolmen taken with Dwyer, III the features as taught by Intriligator and Lewis in that Intriligator teaches a display refresh rate that is well know in the art and in common practice; and Lewis teaches the voltage inversion technique commonly employed in as noise control feature in matrix display devices.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III as applied to claims 1 in items 4 herein above, and further in view of Nishi et al. (U.S. Patent No. 5,541,747).

Art Unit: 2673

Regarding claims 6, Schoolman taken with Dwyer, III **does not teach** a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystal of ferroelectric liquid crystals substantially having no threshold.

Nishi et al. **teaches** an electro-optical device utilizing a liquid crystal having a spontaneous polarization (col. 1, lines 7-26; col. 6, lines 11-67; col. 7, lines 1-36 and Abstract). Nishi et al. further teaches a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystals or ferroelectric liquid crystals substantially having no threshold (col. 11, lines 5-16 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolmen taken with Dwyer, III the feature as taught by Nishi et al. in order to assist the liquid crystal material in switching between different states.

8. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III as applied to claim 1 in item 4 hereinabove, and further in view of Beller et al. (U.S. Patent No. 6,046,7120).

Regard claims 7 and 13, Schoolman taken with Dwyer, III in **does not teach** an input operation device connected to said controller, wherein said controller transmits a signal in the form of a electric wave to said display device; or an image pick-up device wherein said image pick-up device converts at least images of said input operation device and a hand of said user into electrical signals and supplies said electrical signals to a display device.

Art Unit: 2673

Beller et al. **teaches** a head mounted communication system for providing interactive visual communications with a remote system (col. 1, lines 7-16 and 48-67; col. 2, lines 1-14 and Fig. 1). Beller et al. further **teaches** an input operation device connected to said controller, wherein said controller transmits a signal in the form of a electric wave to said display device (col. 7, lines 60-67; col. 8, lines 1-11 and Fig. 1). Still further Beller **teaches** an image pick-up device wherein said image pick-up device converts at least images of said input operation device and a hand of said user into electrical signals and supplies said electrical signals to a display device (col. 4, lines 38-46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolman and Dwyer, III the features as taught by Beller et al. in that the ability to transmit signals to a remote device would extend the adaptability of the system to a larger number of applications. Further, it would have been obvious to a person of ordinary skill in the art at the time of the invention that with the camera (pick-up device) in the system as taught by Beller et al.; whatever is in the field of view of the camera, including the hand of the user, would be included in the image that is transmitted to a display device.

9. Claims 8, 10, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III in view of Beller et al. as applied to claim 7 and 13 in item 8 hereinabove, and further in view of Funai et al.

Regarding claims 8 and 14, Schoolman taken with Dwyer, III in view of Beller et al. **does not teach** channel formation regions of TFTs connected to pixel electrodes of the said flat panel

Art Unit: 2673

displays of said display device are constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface.

Funai et al. **teaches** channel formation regions of TFTs connected to pixel electrodes of the said flat panel displays of said display device are constituted by a semiconductor thin film formed by a collection of a plurality of bar-shaped or planar bar-shaped crystals formed on an insulting surface (col. 1, lines 8-14).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolman taken with Deyer, III in view of Beller et al. the feature as taught by Funai et al. in that that it facilitates the fabrication of an active matrix type liquid crystal display device.

Relative to claims 10 and 16, Funai et al. further **teaches** an information processing device wherein 90 % or more of crystal lattices at grain boundries of a channel formation regions have continuity (col. 12, lines 60-65). Though Funai et al. does not specifically cite 90 % he does teach "uniformity over a larage area".

10. Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III in view of Beller et al. as applied to claims 7 and 13 in item 8 herein above, and further in view of Intriligator (U.S. Patent No. 6,163,323) taken with Lewis (U.S. Patent No. 6,040,812).

Relative to claims 11 and 17, Schoolman taken with Dwyer, III in view of Beller et al. **does not teach** flat panel displays comprising a display device on which one screen is written at frequencies

Art Unit: 2673

in the range from 30 Hz to 180 Hz and on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

Intriligator **teaches** a self-synchronizing animation (col. 1, lines 6-9 and col. 2, lines 27-40).

Intriligator further **teaches** a display device on which one screen is written at frequencies in the range from 30 Hz to 180 Hz (col. 3, lines 24-37).

Schoolman taken with Dwyer, III in view of Beller et al. and further in view of Intriligator **does not teach** flat panel displays comprising a display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen.

Lewis **teaches** an active matrix display with integrated drive circuitry (col. 1, lines 6-8 and 54-65; col. 2, lines 1- 16). Lewis further **teaches** display device on which screen display is carried out with the polarity of the voltage applied to the pixel electrodes inverted for each screen (col. 13, lines 23-34).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolmen taken with Dwyer, III in view of Beller et al the features as taught by Intriligator taken with Lewis in that Intriligator teaches a display refresh rate that is well know in the art and in common practice; and Lewis teaches the voltage inversion technique commonly employed in as noise control feature in matrix display devices.

11. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoolman taken with Dwyer, III in view of Beller et al. as applied to claims 7 and 13 in item 8 hereinabove, and further in view of Nishi et al. (U.S. Patent No. 5,541,747).

Art Unit: 2673

Regarding claims 12 and 18, Schoolman taken with Dwyer, III in view of Beller et al. **does not teach** a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystal or ferroelectric liquid crystals substantially having no threshold.

Nishi et al. **teaches** an electro-optical device utilizing a liquid crystal having a spontaneous polarization (col. 1, lines 7-26; col. 6, lines 11-67; col. 7, lines 1-36 and Abstract). Nishi et al. further teaches a flat panel display device which is a liquid crystal display using a liquid crystal material which is antiferroelectric liquid crystals or ferroelectric liquid crystals substantially having no threshold (col. 11, lines 5-16 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate in the device as taught by Schoolman taken with Dwyer, III the feature as taught by Nishi et al. in order to assist the liquid crystal material in switching between different states.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,072,445	Spitzer et al.
U. S. Patent No.	6,043,800	Spitzer et al.
U. S. Patent No.	6,011,653	Karasawa
U. S. Patent No.	5,971,538	Heffner

Art Unit 2673

Responses

13. Responses to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 20231. If applicant desires to fax a response, (703) 308-9051 may be used for formal communications or (703) 308-6606 for informal or draft communications. NOTE: a Request for Continuation (Rule 609 or 62) cannot be faxed.

Please label "PROPOSED" or "DRAFT" for informal facsimile communications. For after final responses, please label "AFTER FINAL" or "EXPEDITED PROCEDURE" on the document.

Hand-delivered responses should be brought to Crystal Part II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Inquires

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is (703) 306-3020. The examiner can normally be reached on Monday-Thursday from 9:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938.

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Vincent E. Kovalick

Vincent E. Kovalick

Bipin Shalwala

**BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**